

### **DETAILED ACTION**

This Office Action is in response to Appeal Brief filed July 11, 2008. The finality of claims 1-14 has been withdrawn to due a Restriction/Election Requirement. The Examiner should have raised the issue of Restriction and the Examiner takes this opportunity to correct her position by raising the issue of Restriction. Examiner thanks Applicant's representative Scott Paul for his understanding in this matter. Claims 1-14 are presented for Restriction/Election and further examination.

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121.
  - I. Claims 1-6, drawn to an autonomic request routing policy selection system selecting routing policies based upon cache metrics, classified in class 709, subclasses 238.
  - II. Claims 7-14, drawn to an autonomic request routing policy selection method comparing hit rate metrics based upon trace footprint and cache allocation to determine a preferred routing policy, classified in class 711, subclass 129.
2. The inventions are distinct, each from one another because of the following reasons: Inventions I and II are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product

(MPEP § 806.04(b), 3<sup>rd</sup> paragraph), and the species are patentably distinct (MPEP § 806.04(h)). Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and the search required for Invention I is not required for Invention II, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. Examiner contacted Applicant's representative Scott Paul on Wednesday, September 10, 2008 in which an election was made. Group II consisting of claims 7-14 was elected and is presented for examination.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mangipudi et al. (hereinafter "Man", US Patent Application Publication 2004/0162901 A1) in view of Yang et al. (hereinafter "Yang", US Patent Application Publication 2002/0199014 A1).

As per claim 7, Man discloses an autonomic request routing policy selection method comprising the steps of:

- identifying a cache allocation for said coupled server cluster (paragraphs [0019, 0055], Man teaches monitoring and reporting memory utilization including total memory, memory used, free memory of the cluster);
- selecting said preferred routing policy for use in routing content requests to said server cluster (paragraphs [0018, 0044-0045, 0047, 0054-0055], Man teaches selecting one of a plurality of load balancing algorithms (routing policy) to route the packets).

Man does not explicitly disclose:

- identifying a contemporary trace footprint experienced by a coupled server cluster;

- retrieving at least two sets of hit rate metrics, each set of metrics corresponding to a particular routing policy;
- comparing said hit rate metrics based upon said identified trace footprint and said identified cache allocation to determine a preferred routing policy.

However, in an analogous art, Yang teaches identifying the machines in the cluster and their memory space (cache allocation). Yang further teaches monitoring and tracing (trace footprint) web traffic of the server cluster for four months. Characteristics (hit rate metrics) of the URL requests are used to evaluate processing time. These measurements and results are stored in the URL table and used to make routing decisions (paragraphs [0017, 0027, 0033, 0046-0047, 0049]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Yang's identifying a contemporary trace footprint experienced by a coupled server cluster, retrieving hit rate metrics, and comparing said hit rate metrics based upon said identified trace footprint and said identified cache allocation to determine a preferred routing policy in Man's method enabling content-aware routing so that properties of the URL in each request can be known and used in routing requests (Yang, paragraphs [0017, 0027]).

As per claim 8, Man, in view of Yang, discloses the method of claim 7. Man further discloses the method further comprising the steps of:

- computing with said hit rate metrics, an optimal server cluster configuration for said preferred routing policy (paragraphs [0038, 0044, 0055], Man teaches distributing

incoming traffic to the most available and/or efficient server within each class or cluster. Clusters are created based upon capabilities of the computers that host them as well as business policies);

- provisioning an optimal number of servers in said server cluster based upon said computed optimal server cluster configuration (paragraphs [0038, 0044, 0055], Man teaches clusters are created based upon capabilities of the computers that host them as well as business policies).

As per claim 9, Man discloses the method of claim 7, wherein said selecting step comprises the step of selecting a server load balancing type routing policy (paragraph [0046]).

Man does not explicitly disclose when said identified cache allocation approaches in value said identified trace footprint.

However, in an analogous art, Yang teaches identifying the machines in the cluster and their memory space (cache allocation). Yang further teaches monitoring and tracing (trace footprint) web traffic of the server cluster for four months. Characteristics (hit rate metrics) of the URL requests are used to evaluate processing time. These measurements and results are stored in the URL table and used to make routing decisions (paragraphs [0017, 0027, 0033, 0046-0047, 0049]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Yang's when said identified

cache allocation approaches in value said identified trace footprint in Man's method enabling content-aware routing so that properties of the URL in each request can be known and used in routing requests (Yang, paragraphs [0017, 0027]).

As per claim 10, Man does not explicitly disclose the method of claim 7, wherein said selecting step comprises the step of selecting a content localizing type routing policy when either said identified cache allocation is small, or when said trace footprint is large.

However, Yang teaches identifying the size and number of files on Web sites requested. The processing of the file is measured. This information is stored in the URL table. The table shows if the URL is larger than levels and used to route the URL requests (paragraphs [0026, 0047-0049]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate selecting step comprises the step of selecting a content localizing type routing policy when either said identified cache allocation is small, or when said trace footprint is large Yang's in Man's method enabling content-aware routing so that properties of the URL in each request can be known and used in routing requests (Yang, paragraphs [0017, 0027]).

As per claim 11, Man discloses a machine readable storage having stored thereon a computer program for autonomic request routing policy selection, the computer program

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comprising a routine set of instructions which when executed by the machine cause the machine to perform the steps of:

- identifying a cache allocation for said coupled server cluster (paragraphs [0019, 0055], Man teaches monitoring and reporting memory utilization including total memory, memory used, free memory of the cluster);
- selecting said preferred routing policy for use in routing content requests to said server cluster (paragraphs [0018, 0044-0045, 0059, 0062], Man teaches selecting an appropriate load balancing algorithm (routing policy) to route packets).

Man does not explicitly disclose:

- identifying a contemporary trace footprint experienced by a coupled server cluster;
- retrieving at least two sets of hit rate metrics, each set of metrics corresponding to a particular routing policy;
- comparing said hit rate metrics based upon said identified trace footprint and said identified cache allocation to determine a preferred routing policy.

However, in an analogous art, Yang teaches identifying the machines in the cluster and their memory space (cache allocation). Yang further teaches monitoring and tracing (trace footprint) web traffic of the server cluster for four months. Characteristics (hit rate metrics) of the URL requests are used to evaluate processing time. These



measurements and results are stored in the URL table and used to make routing decisions (paragraphs [0017, 0027, 0033, 0046-0047, 0049]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Yang's identifying a contemporary trace footprint experienced by a coupled server cluster, retrieving hit rate metrics, and comparing said hit rate metrics based upon said identified trace footprint and said identified cache allocation to determine a preferred routing policy in Man's method enabling content-aware routing so that properties of the URL in each request can be known and used in routing requests (Yang, paragraphs [0017, 0027]).

As per claim 12, Man, in view of Yang discloses the machine-readable storage of claim 11. Man further discloses the machine-readable storage further comprising the steps of:

- computing with said hit rate metrics, an optimal server cluster configuration for said preferred routing policy (paragraphs [0038, 0044, 0055], Man teaches distributing incoming traffic to the most available and/or efficient server within each class or cluster. Clusters are created based upon capabilities of the computers that host them as well as business policies);
- provisioning an optimal number of servers in said server cluster based upon said computed optimal server cluster configuration (paragraphs [0038, 0044, 0055], Man teaches clusters are created based upon capabilities of the computers that host them as well as business policies).

As per claim 13, Man discloses the machine-readable storage of claim 11, wherein said selecting step comprises the step of selecting a server load balancing type routing policy.

Man does not explicitly disclose when said identified cache allocation approaches in value said identified trace footprint.

However, in an analogous art, Yang teaches identifying the machines in the cluster and their memory space (cache allocation). Yang further teaches monitoring and tracing (trace footprint) web traffic of the server cluster for four months. Characteristics (hit rate metrics) of the URL requests are used to evaluate processing time. These measurements and results are stored in the URL table and used to make routing decisions (paragraphs [0017, 0027, 0033, 0046-0047, 0049]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate Yang's when said identified cache allocation approaches in value said identified trace footprint in Man's method enabling content-aware routing so that properties of the URL in each request can be known and used in routing requests (Yang, paragraphs [0017, 0027]).

As per claim 14, Man does not explicitly discloses the machine readable storage of claim 11, wherein said selecting step comprises the step of selecting a content

localizing type routing policy when either said identified cache allocation is small, or when said trace footprint is large.

However, Yang teaches identifying the size and number of files on Web sites requested. The processing of the file is measured. This information is stored in the URL table. The table shows if the URL is larger than levels and used to route the URL requests (paragraphs [0026, 0047-0049]).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate selecting step comprises the step of selecting a content localizing type routing policy when either said identified cache allocation is small, or when said trace footprint is large Yang's in Man's method enabling content-aware routing so that properties of the URL in each request can be known and used in routing requests (Yang, paragraphs [0017, 0027]).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BARBARA N. BURGESS whose telephone number is (571)272-3996. The examiner can normally be reached on M-F (8:00am-4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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September 18, 2008

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